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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/787,496	Applicant(s) AOKI ET AL.	
	Examiner Thi Q. Le	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1,2,6,9,11-13,17,20 and 22-24 is/are rejected.
- 7) ☐ Claim(s) 3-5,7,8,10,14-16,18,19 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements (IDS) filed on 6/23/2005, 4/20/2004, 3/30/2004 were considered by the examiner.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. **Claims 1, 9, 12 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Krishnaswamy et al. (US Patent # 7,088,920)** and in view of **Wiebe (US PGPub 2003/0223409)**.

Consider **claim 1**, Krishnaswamy et al. disclose, a method for communicating optical traffic in a network comprising a plurality of network nodes (read as, nodes 102-105; figure 1), the method comprising: receiving traffic to be added to the network at a network node (read as, the add/drop element receive traffic to be added to the optical network; column 1 lines 49-53), the network operable to communicate received traffic in an optical signal comprising a plurality of channels (read as, wavelength division multiplex signal; column 2 line 41); determining one or more destination nodes of the received traffic (read as; it is inherent that the network management element must know the destination node, before it can establish communication; figure 2 column 4 lines 1-10); assigning the received traffic to one or more particular channels of the plurality of channels of the optical signal based on the determined one or more destination nodes (read as, selecting the appropriate wavelength; column 1 lines 59-67); configuring one or more of the network nodes to process the traffic contained in the assigned channels based on one or more destination nodes of the optical traffic (read as, sending control channel to destination node before determining communication path and wavelength; figure 2 column 4 lines 1-53); and communicating the traffic through network in the assigned channels of the optical signal based on the determined one or more destination nodes (read as, selecting communication path and wavelength between two nodes; column 1 lines 59-67) (figures 1 and 2; column 1 line 49-

column 2 line 2; column 2 lines 25-52; column 4 lines 1-42. Krishnaswamy et al. fails to disclose one of the criteria for determining the transmission path and wavelength between two nodes is data rate.

In related art, Wiebe discloses, an apparatus for transporting digital audio related signals. Wherein, digital audio-related signals having different data rates may be multiplexed on the same TDM bit stream by assigning different numbers of TDM time slot channels to a given digital audio signal "channel" based on its data rate (paragraph 0067).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teachings of Wiebe with Krishnaswamy et al. Since, sharing transmission bandwidth with more than one data source (i.e. sources with different data rate) can improve the bandwidth usage rate and reduce bandwidth wastage.

Consider **claim 9, and as applied to claim 1 above**, Krishnaswamy et al. as modified by Wiebe further disclose, communicating the optical traffic comprises communicating the optical traffic as point-to-point traffic (read as, communication between node A and node B; Krishnaswamy et al.; figure 2) (Krishnaswamy et al.; figure 2; column 4 lines 1-10). Krishnaswamy et al. as modified by Wiebe fail to explicitly disclose, determining the data rate comprises determining that the data rate of the optical traffic comprises greater than 5 Gbps.

It would have been obvious for a person of ordinary skill in the art to understand, that an optical fiber system disclosed by Krishnaswamy et al. as modified by Wiebe is capable of establishing data communication with rate from OC-1 to OC-192 (51.84 Mbps to 9953.28 Mbps). Since, the invention as described by Krishnaswamy et al. as modified by Wiebe can

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select transmission path and wavelength, based on data rate and destination node, it is obvious that the system is able to detect data rate from OC-1 to OC-192 (read as, greater than 5 Gbps).

Consider **claim 12**, Krishnaswamy et al. disclose, an optical network operable to communicate traffic in an optical signal in a plurality channels, the network comprising: a plurality of network nodes (read as, nodes 102-105; figure 1) nodes operable to: receive traffic to be added to the network at the node (read as, the add/drop element receive traffic to be added to the optical network; column 1 lines 49-53); and communicate the received traffic through the network in the optical signal based on one or more nodes for which the received traffic is destined (read as, transmitting wavelength division multiplex signal; column 2 line 41); and a network management system (read as, network management element; column 1 lines 64-65) operable to: determine the one or more destination nodes of the received traffic (read as; it is obvious that the network management element must know destination node, before it can establish communication; figure 2 column 4 lines 1-10); assign the received traffic to one or more particular channels of the plurality of channels of the optical signal based on the determined one or more destination nodes of the received traffic (read as, selecting transmission path and wavelength base on criteria, such as, shortest path; column 2 lines 25-52); and configure one or more of the nodes on the network to process the traffic contained in the assigned channels based on the determined one or more destination nodes of the received traffic (read as, sending control channel to destination node before determining communication path and wavelength; figure 2 column 4 lines 1-53) (figures 1 and 2; column 1 line 49-column 2 line 2; column 2 lines 25-52; column 4 lines 1-42). Krishnaswamy et al. fails to disclose one of the criteria for determining the transmission path and wavelength between two nodes is data rate.

In related art, Wiebe discloses, an apparatus for transporting digital audio related signals. Wherein, digital audio-related signals having different data rates may be multiplexed on the same TDM bit stream by assigning different numbers of TDM time slot channels to a given digital audio signal " channel" based on its data rate (paragraph 0067).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teachings of Wiebe with Krishnaswamy et al. Since, sharing transmission bandwidth with more than one data source (i.e. sources with different data rate) can improve the bandwidth usage rate and reduce bandwidth wastage.

Consider **claim 20, and as applied to claim 12 above**, claim 20 is rejected for the same reason as claim 9 above.

6. **Claims 2 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Krishnaswamy et al. (US Patent # 7,088,920)** and in view of **Wiebe (US PGPub 2003/0223409)** and further in view of **Lichtman et al. (US Patent # 7,072,584)**.

Consider **claim 2, and as applied to claim 1 above**, Krishnaswamy et al. as modified by Wiebe disclosed the invention as described above; except for, determining the data rate comprises determining that the data rate of the traffic comprises from 100 Mbps to 1 Gbps; and communicating the optical traffic comprises communicating the optical traffic as optically-transmitted/electrically-selected/optically-dropped (OEO) traffic.

It would have been obvious for a person of ordinary skill in the art to understand, that an optical fiber system disclosed by Krishnaswamy et al. as modified by Wiebe is capable of establishing data communication with rate from OC-1 to OC-192 (51.84 Mbps to 9953.28 Mbps). Since, the invention as described by Krishnaswamy et al. as modified by Wiebe can

select transmission path and wavelength, based on data rate and destination node, it is obvious that the system is able to detect data rate from OC-1 to OC-192 (read as, approximately 100 Mbps to approximately 1 Gbps).

In related art, Lichtman et al., disclose an optical ring network with traffic of type: optically-transmitted/electrically-selected/optically-dropped (OEO) (figures 3, 6; column 9 line 60 – column 10 line 50; column 13 lines 4-55) (note, received optical signal are converted to electrical signal by the line card, before entering the electronic switch).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teachings of Lichtman et al. with Krishnaswamy et al. as modified by Wiebe. Because Lichtman et al. disclose a link protection method; which is crucial for recovering from a link breakage or node failure.

Consider **claim 13, and as applied to claim 12 above**, claim 13 is rejected for the same reason as claim 2 above.

7. **Claims 6 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Krishnaswamy et al. (US Patent # 7,088,920)** and in view of **Wiebe (US PGPub 2003/0223409)** and further in view of **Feuer et al. (US PGPub 2006/0153563)**.

Consider **claim 6, and as applied to claim 1 above**, Krishnaswamy et al. as modified by Wiebe disclosed the invention as described above; except for, determining the data rate comprises determining that the data rate of the traffic comprises from 1 Gbps to 5 Gbps; and communicating the optical traffic comprises communicating the optical traffic as point-to-multipoint traffic.

It would have been obvious for a person of ordinary skill in the art to understand, that an optical fiber system disclosed by Krishnaswamy et al. as modified by Wiebe is capable of establishing data communication with rate from OC-1 to OC-192 (51.84 Mbps to 9953.28 Mbps). Since, the invention as described by Krishnaswamy et al. as modified by Wiebe can select transmission path and wavelength, based on data rate and destination node, it is obvious that the system is able to detect data rate from OC-1 to OC-192 (read as, approximately 1 Gbps to approximately 5 Gbps).

In related at, Feuer et al. disclose a wavelength division multiplex multicast ring network (read as, point-to-multipoint traffic) (figure 1; paragraphs 0008 and 0020-0021) .

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teachings of Feuer et al. with Krishnaswamy et al. as modified by Wiebe. Because Feuer et al. disclose a method and system for multicasting that improves Quality of Service for transmission.

Consider **claim 17, and as applied to claim 12 above**, claim 17 is rejected for same reason as claim 6 above.

8. **Claims 11 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Krishnaswamy et al. (US Patent # 7,088,920)** and in view of **Wiebe (US PGPub 2003/0223409)** and further in view of **May et al. (US PGPub 2004/0252688)**.

Consider **claim 11, and as applied to claim 1 above**, Krishnaswamy et al. as modified by Wiebe disclosed the invention as described above; except for, wherein the optical traffic is communicated in one or more General Framing Procedure (GFP) frames and the destination of the optical traffic is contained within an extension header of the GFP frame.

In related art, May et al. disclose an optical packet routing ring network. Wherein, traffic is communicated in one or more General Framing Procedure (GFP) frames (read as, frame; abstract) and the destination of the optical traffic is contained within an extension header of the GFP frame (read as, data with multiple header, each having one of the destination addresses) (abstract; figures 5 and 6; paragraphs 0032, and 0068).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teachings of May et al. with Krishnaswamy et al. as modified by Wiebe. Since, May et al. provide a method and apparatus for efficient transport of optical packets over frame-based network.

Consider **claim 22, and as applied to claim 12 above**, claim 22 is rejected for same reason as claim 11 above.

9. **Claims 23-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Krishnaswamy et al. (US Patent # 7,088,920)** and in view of **Wiebe (US PGPub 2003/0223409)** and further in view of **DeMartino (US PGPub 2006/0274734)**.

Consider **claim 23, and as applied to claim 1 above**, Krishnaswamy et al. as modified by Wiebe disclosed the invention as described above; except for, wherein communicating the optical traffic comprises communicating the optical traffic as one of optically-transmitted/electrically-selected/optically-dropped (OEO) traffic, point-to-multipoint traffic, or point-to-point traffic depending on the determined data rate.

In related art, DeMartino disclose a system and methods for providing a plurality of communication services. Wherein, communicating the optical traffic comprises communicating the optical traffic as one of optically-transmitted/electrically-selected/optically-dropped (OEO)

traffic (read as, optical signal is transmitted optically from CO to remote node, where it is optical drop, and getting electrically converted from an optical signal, then are electrically distributed by an electronic Multiplexing and Distribution unit 66; paragraph 0054), point-to-multipoint traffic (read as, broadcasting video from CO to all subscribers; paragraphs 0007, 0033, 0081), or point-to-point (read as, voice/telephony from CO to specific subscriber; paragraphs 0007, 0033, 0081) traffic depending on the determined data rate (It is well known in the art of communication, that Video and Voice/telephony have different data rate. Wherein, video has a much higher data rate comparing to voice/telephony. Further, voice/telephony are particularly applied to point-to-point communication; whereas, video are mostly applied to point-to-multipoint or broadcast communication. Thus, a system that are capable of transferring both video and voice/telephony over the same optical network, must be able to send video as a broadcast signal and voice as a point to point signal. Since, voice/telephony and video have different data rate, it can be said that depending on the data rate of an optical signal, it is transmitted as point-to-point or broadcast signal. Further, CO can transmits data to multiple remote nodes, wherein each remote node is assigned a particular wavelength, λ . CO transmits a composite signal which contains a plurality of wavelengths λ_1 - λ_N , such that, a part of the composite signal is drop at a first remote node and transmission is continue to a second node, and a part of the composite is again dropped at a second node, etc (paragraph 0054, figure 6). Drop signal could either be broadcast signal, which has data rate at 2.5Gb/s, or ADSL signal, which has data rate at 6Mb/s. Broadcast signal is pass to video switching element (VSE) 74, wherein the VSE 74 select a set of broadcast video channels having a composite data rate in the range of 9-24.5Mb/s from a larger set of broadcast channels have composite data rate of 2.5Gb/s. An a subscribers sends an upstream control signal

to the remote terminal to select the desired audio/video channel. Thus, it can be said the broadcast video signal is an optically-transmitted/electrically-selected/optically-dropped traffic (figure 6, paragraph 0059).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teachings of DeMartino with Krishnaswamy et al. as modified by Wiebe. Since the system disclosed by DeMartino is capable of interact with existing access lines, such as twisted part. It would reduce the cost of constructing a new infrastructure for the communication network. Further, the system can provides voice, video, and data services, thus providing a wide range of communication services over the same network.

Consider **claim 24, and as applied to claim 12 above**, Krishnaswamy et al. as modified by Wiebe disclosed the invention as described above; wherein one or more of the plurality of nodes are operable to communicate the optical traffic as any of optically-transmitted/electrically-selected/optically-dropped (OEO) traffic, point-to-multipoint traffic, or point-to-point traffic depending on the determined data rate.

In related art, DeMartino disclose a system and methods for providing a plurality of communication services. Wherein, one or more of the plurality of nodes are operable to communicate the optical traffic as any of optically-transmitted/electrically-selected/optically-dropped (OEO) traffic (read as, optical signal is transmitted optically from CO to remote node, where it is optical drop, and getting electrically converted from an optical signal, then are electrically distributed by an electronic Multiplexing and Distribution unit 66; paragraph 0054), point-to-multipoint traffic (read as, broadcasting video from CO to all subscribers; paragraphs 0007, 0033, 0081, or point-to-point traffic (read as, voice/telephony from CO to specific

subscriber; paragraphs 0007, 0033, 0081) depending on the determined data rate (It is well known in the art of communication, that Video and Voice/telephony have different data rate. Wherein, video has a much higher data rate comparing to voice/telephony. Further, voice/telephony are particularly applied to point-to-point communication; whereas, video are mostly applied to point-to-multipoint or broadcasted communication. Thus, a system that are capable of transferring both video and voice/telephony over the same optical network, must be able to send video as a broadcast signal and voice as a point to point signal. Since, voice/telephony and video have different data rate, it can be said that depending on the data rate of an optical signal, it is transmitted as point-to-point or broadcast signal. Further, CO can transmits data to multiple remote nodes, wherein each remote node is assigned a particular wavelength, λ . CO transmits a composite signal which contains a plurality of wavelengths λ_1 - λ_N , such that, a part of the composite signal is drop at a first remote node and transmission is continue to a second node, and a part of the composite is again dropped at a second node, etc (paragraph 0054, figure 6). Drop signal could either be broadcast signal, which has data rate at 2.5Gb/s, or ADSL signal, which has data rate at 6Mb/s. Broadcast signal is pass to video switching element (VSE) 74, wherein the VSE 74 select a set of broadcast video channels having a composite data rate in the range of 9-24.5Mb/s from a larger set of broadcast channels have composite data rate of 2.5Gb/s. An a subscribers sends an upstream control signal to the remote terminal to select the desired audio/video channel. Thus, it can be said the broadcast video signal is an optically-transmitted/electrically-selected/optically-dropped traffic (figure 6, paragraph 0059).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teachings of DeMartino with Krishnaswamy et al. as modified by Wiebe. Since the system disclosed by DeMartino is capable of interact with existing access lines, such as twisted part. It would reduce the cost of constructing a new infrastructure for the communication network. Further, the system can provides voice, video, and data services, thus providing a wide range of communication services over the same network.

Allowable Subject Matter

10. **Claims 3-5, 7-8, 10, 14-16, 18-19 and 21** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

11. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

12. Applicant's arguments filed 7/06/2007 have been fully considered but they are not persuasive.

On page 19, the applicant argues, there is no disclosure or suggestion that the reason why video traffic is transmitted in a different manner than voice/telephony traffic is based on its data rate. The examiner respectfully disagrees, it is shown with respect to figure 6, λ_B is use to broadcast video at 2.5Gb/s (i.e. every subscriber is receiving video signal at 2.5Gb/s); and λ_{1-8} are use to carry a plurality of ADSL signals at 2.5Gb/s, wherein, each individual ADSL has

maximum of 6Mb/s data rate. Further, in paragraph 0058, DeMartino discloses ADSL also handles plain old telephone service. Thus, it should be clear that there are suggestions that voice/telephony signal (i.e. plain old telephone service signals) has a different data rate than video signal (i.e. broadcast signal); also ADSL signal only has a maximum downstream transmission data rate of 6 Mb/s, while downstream video broadcast signal has a data rate of 2.5Gb/s for each subscriber. The applicant further mentioned that λ_{1-8} carry a 2.5Gb/s SONET signal and that λ_B also carries a 2.5Gb/s broadcast transmission. But the applicant had failed to notice that each of the wavelengths λ_{1-8} carrying a 2.5Gb/s SONET signal is a composite signal which carries a plurality of ADSL signals, each with a maximum downstream data rate of 6Mb/s; wherein, wavelength λ_B carries a single 2.5Gb/s video broadcast signal. Although, each of λ_{1-8} are carrying a 2.5Gb/s SONET signal, each individual ADSL signal within each of λ_{1-8} has a maximum downstream data rate of 6Mb/s; while, λ_B carries a single video broadcast signal at 2.5Gb/s. Therefore, video broadcast signal and individual ADSL signal do not have the same data rate.

Conclusion

13. Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

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14. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Thi Le whose telephone number is (571) 270-1104. The Examiner can normally be reached on Monday-Friday from 7:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Thi Le


KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER